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- [57]
- ABSTRACT**

- A data retrieval and acquisition system having a wireless handheld interface for data entry by the user. The system includes a communication server for communicating, such as through IR signals, with the handheld interfaces. The communications server communicates with multiple command servers and with a master server and/or other communication servers through a communications bus. The handheld interface includes touch screen which is operated through an event driven architecture. The user is allowed to enter data through virtual rolling keys, a scroll bar, virtual key pad, bar code reader, and the like. The system minimized the transmission time by minimizing the necessary information transmitted and by synchronizing the operation of the handheld interfaces with the corresponding communications server. The communications server transmits information to the handheld through a first unique protocol and to the command server through a second unique protocol. Data transmission is further reduces by using shorthand command codes for constants, such as for commands, user names, and the like.

- 42 Claims, 17 Drawing Sheets**

- [58] **Field of Search** 395/325, 500,

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